REMARKS

Claims 1-56 are pending in the present application. With the Office Action of November 1, 2004, the Examiner has rejected claims 1-56 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent No. 6,654,344 B1 to Toporek et al. ("Toporek") in view of U.S. patent No. 6,711,379 B1 to Owa et al. ("Owa"). The applicants traverse such rejections and respectfully request reconsideration. This amendment is timely filed as it is accompanied by a petition for a two-month extension of time and the fee therefore extending the response date to April 1, 2005.

Claims 1, 17, 29, 38 and 49 and their dependent claims are allowable over the cited art

Claims 1, 17, 29, 38 and 49 recite a method or system of transmitting data through a communication link using a plurality of communication connections, including a plurality of worker objects where each of the plurality of worker objects is capable of forming and delivering a message to each of the plurality of communication connections at a predetermined rate so that each communication connection uses no more than a predetermined portion of a bandwidth of the communication link. Ensuring that each communication connection does not use more than a predetermined bandwidth ascertains that the plurality of communication connections do not simultaneously attempt to deliver messages through the communication link, which may result in overloading of the buffers, stacks, queues, etc., associated with the communication link, and corruption of the transmitted data. As a result, the method or system recited in the claims 1, 17, 29, 38 and 49 enables efficient transmission of data through a communication link and improves the throughput of the communication link by interposing an orchestrating mechanism between data sources and an underlying layer associated with the communication connections.

Neither of Toporek and Owa discloses any mechanism for ensuring that each of a plurality of communication connections uses no more than a predetermined portion of a bandwidth of a communication link, as recited by each of the claims 1, 17, 29, 38 and 49.

While Toporek discloses a method of controlling flow of information over an internet connection established over a satellite communication link, as correctly mentioned by the Examiner, Toporek does not disclose or suggest any method of ensuring that each of a plurality of communication connections uses no more than a predetermined portion of the bandwidth of the satellite communication link. Moreover, whereas Toporek discloses a

system for controlling information flows in a TCP layer connection or its wireless equivalent, claims 1, 17, 29, 38 and 49 recite a system or method of managing a plurality of communication connections, where each of the plurality of communication connections operates at a level above a TCP layer connection. Thus, Toporek does not disclose transmitting data through a communication link having a plurality of connections in a manner recited by the claims 1, 17, 29, 38 and 49.

As is well known to one of ordinary skill in the art, communicating messages over a TCP layer does not involve delivering messages based on the bandwidth of one or more communication connections supported by the TCP layer. Therefore, there is no motivation or suggestion to modify the system disclosed in Toporek to deliver messages in a manner so that each of a plurality of communication connections uses no more than a predetermined portion of a bandwidth, in a manner recited by the claims 1, 17, 29, 38 and 49.

On the other hand, Owa discloses a digital broadcasting system for broadcasting multimedia data consisting of picture, sound and text to a terminal device built in a mobile station. While the broadcasting system disclosed in Owa includes a plurality of object encoding units, the broadcasting system does not disclose delivering the outputs of the encoding units to an underlying layer of a plurality of communication connections so that each communication connection uses no more than a predetermined portion of the bandwidth. In fact, the Owa broadcasting system multiplexes the outputs of the encoding units into a multiplexed stream and in compliance with a predetermined format, where the multiplexed stream is broadcast over a single communication connection to the satellite. Thus, Owa does not involve broadcasting the output of the encoding units over a plurality of communication connections, in a manner recited by the claims 1, 17, 29, 38 and 49.

Moreover, because the broadcasting system disclosed in Owa does not involve a plurality of communication connections, Owa does not and cannot provide any suggestion or motivation for modifying the broadcasting system to provide a means for delivering the outputs of the encoding units to an underlying layer of a plurality of communication connections so that each communication connection uses no more than a predetermined portion of the bandwidth, in a manner recited by the claims 1, 17, 29, 38 and 49.

It is clear that the prior art must teach or suggest each of the claim elements and must additionally provide a suggestion of, or an incentive for, the claimed combination of elements to establish a prima facie case of obviousness. See In re Oetiker, 24 U.S.P.Q.2d 1443, 1446

(Fed. Cir. 1992); Ex parte Clapp, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. 1985); In re Royka, 490 F.2d 981 (CCPA 1974) and M.P.E.P. § 2143. Because neither of Toporek and Owa provides any motivation or suggestion to deliver messages so that each of a plurality of communication connections uses no more than a predetermined portion of a bandwidth, it follows that claims 1, 17, 29, 38 and 49 and their dependent claims are not rendered obvious by Toporek, Owa or any combination thereof.

Conclusion

In view of the foregoing, it is respectfully submitted that the above application is in condition for allowance. If there is any matter that the examiner would like to discuss, he is invited to contact the undersigned representative at the telephone number set forth below.

Respectfully submitted,
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AMENDMENTS TO THE DRAWINGS

In response to the Office Action, the applicants submit amended drawings for Figs. 7 and 10 along with this paper.

In Fig. 7, the reference legend is corrected to: "500 ms TBC".

In Fig. 10, the X-axis title is corrected to: "Increasing Buffer Size".

The applicants thank the Examiner to point out the corrections in these drawings.